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Immediate and long term outcomes after unprotected left main coronary artery angioplasty

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Background: Although cardiac surgery is still considered as the gold standard of care for patients with unprotected left main coronary artery (ULMCA) disease, percutaneous coronary intervention (PCI) is emerging as a possible alternative.

Aim: To evaluate immediate and long term outcomes of PCI in an unselected cohort of patients with ULMCA disease.

Methods: 246 consecutive patients who underwent ULMCA angioplasty in a single high volume centre over a 5-year period were included. Major adverse cardiac events were defined as a combined end point of cardiac death, non fatal myocardial infarction (MI), or target lesion revascularisation (TLR). 2 sided p values<0.05 were considered statistically significant

Results: Mean age was 72.5±11.3. 185 patients (75.2%) were males; 60 (24.4%) had diabetes mellitus and 62 (25.2%) had peripheral artery disease. Mean additive EuroSCORE value was 7.1±4.5 and mean predicted surgical mortality by logistic EuroSCORE was 14%.
For distal LM lesions (56%), the provisional side-branch T-stenting approach was used in 81% of cases and final kissing balloon inflation in 92%. DES were used in 32% of cases. Angiographic success was obtained in 99.6% of cases. In hospital mortality was 1.6%
After a mean follow up of 30.42 months, rates of cardiac deaths, TLR and MACE were respectively 8.5% (21 cases), 11% (27 cases) and 19.9% (48cases).
On multivariate analysis, EuroSCORE >6 was the only independent predictor of cardiac death (HR= 3.1 95% IC [1.2-8.3], p=0.028); predictors of MACE were EUROSCORE>6 (HR= 1.95 95% IC [1.05-3.6], p=0.032) and distal LM lesions (HR= 2.02, 95% IC [1.04-3.9], p=0.037).Conversely, neither initial clinical presentation nor stent type affected outcome.

Conclusion: ULMCA stenting with a strategy of provisional side-branch T-stenting for distal lesions, provides excellent acute angiographic results and good long term clinical outcomes. Long term predictors of death were EuroSCORE values>6 and distal LM lesion

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Relationship between blood cells, non-invasive coronary flow reserve, left ventricular function, and in-hospital adverse events, in patients with anterior acute myocardial infarction

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Objective: to assess the relationship between blood cells before and after successful primary angioplasty (PA), and non-invasive coronary flow reserve (CFR), left ventricular (LV) function, and in-hospital adverse events (AE), in patients (pts) with ST-elevation myocardial infarction (STEMI).

Methods: Blood cells count, on admission (Ad) and within 24 h after PA, and cell differential count on Ad, was obtained in 58 consecutive pts (mean age 58 ± 13 years, 18 women) with first anterior STEMI. Transthoracic Doppler echocardiography was performed prospectively 24 h after PA and at 3 months follow-up (fu), measuring non invasive CFR in the distal part of the left anterior descending artery (LAD) with intravenous adenosine, LV ejection fraction (LVEF) (biplane Simpson's rule), and infarct zone wall motion score (IZWMS). In-hospital AE was a composite of death, heart failure (Killip ≥ 2), and reinfarction.

Results: Using a ROC curve analysis, the best cut-off of acute CFR for the prediction of global LV recovery (LVEF improvement of ≥ 10% at fu) was 1.7 (AUC 0.87, $p < 0.01$). Pts with impaired CFR (< 1.7) had higher leucocytes (L) count on Ad and after PA, and higher neutrophil (N) and monocyte (M) count, as compared to pts with CFR > 1.7 (all, $p < 0.01$). Furthermore, there was a significant inverse correlation between acute CFR and L on Ad ($r = -0.36$) and after PA ($r = -0.38$), and with N, and M count (all, $p < 0.05$). Pts with AE (n = 11) had higher L count on Ad and after PA, and higher M count, as compared to pts without AE (all, $p < 0.05$). At fu, pts with global and regional LV recovery had significantly lower L and N count (all, $p < 0.05$). A significant inverse correlation was found between L count (before and after PA) and LVEF, and IZWMS, at fu (all, $p < 0.05$). In multivariate analysis, L count before PA was an independent determinant of acute CFR and AE, respectively (all, $p < 0.05$).

Conclusion: In pts with anterior STEMI, L count is inversely correlated to acute CFR, and to LV function at fu. These links seem higher after than before PA, and N and M cells might play a role in this setting. Furthermore, L count is an independent predictor of acute CFR and AE.

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Off label use of Siromilus Eluting Stent increases the rate of death and stent thrombosis without jeopardizing the efficacy: EVASTENT matched cohort registry

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Background: In everyday practice the off label use of DES is widespread, but are SES as effective in reducing the need for revascularization when used on-label and do certain types of off-label use raise greater safety concerns?

Methods: The EVASTENT study is a matched cohort registry of 1 731 patients was designed to assess the efficacy and safety of the SES in diabetic patients with single or multiple vessel disease (SVD and MVD) compared to non-diabetic patients. Although on-label use of SES was required patients presenting with various categories of off-label lesions were included. The 3-year results (97% follow-up) are presented. All MACES (cardiac death, non-fatal myocardial infarction and Stent thrombosis ST according to Academic Research Consortium definitions) have been evaluated for safety and target lesion revascularisation (TLR) for efficacy. Because EVASTENT is a registry, we use two statistical methods to compare On and Off-label use of DES (Multivariate analysis and propensity score)

Results: Most of the time, an off-label lesion was a bifurcation lesion, a lesion with thrombus, a very calcified lesion or an ostial lesion. Off-label SES implantation was associated with higher rates of cardiac death (5.3% vs 2.5%, p=0.008) and MACEs (10.6% vs 5.9 %, p=0.005) with rates of ST acceptable (5.1% vs 3%, p=NS). In multivariate analysis off-label use remained an independent predictor of cardiac death and the occurrence of MACEs but no of ST. The same results were found with use propensity score. Efficacy results were the same in both groups. The TLR and TVR rate were very low and excellent, even for off-label use of DES (6.9 and 12.9%, respectively).

Conclusion: The clinical efficacy of SES in reducing the need for further revascularizations is confirmed by the low rates of TLR, even for off label use. However, our results show higher rates of cardiac death and MACEs, but no ST, when SES are used off-label.

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Dual antiplatelet responsiveness detected by point-of-care assay VerifyNow® in elderly patients (≥ 75 years) receiving percutaneous intervention

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Background: Dual antiplatelet therapy with aspirin and clopidogrel is the cornerstone of treatment after percutaneous coronary intervention (PCI). Platelet responsiveness to these two agents is not well known in elderly